# Notes on the Entomology of Hawawiian *Euphorbia* with the Description of a New *Dictyophorodelphax* (*Homoptera, Delphacidae*).

BY JOHN COLBURN BRIDWELL.

The endemic Hawaiian species of *Euphorbia* form a natural group of closely related species, either shrubs or small trees, ranging from the arid regions of the coastal belt to some of the rainy ridges more than two thousand feet in elevation, most commonly growing on the dry ends of the lateral ridges at the outer limit of native vegetation. They support a diversified insect fauna which has as yet been very imperfectly studied. Some beginning has been made upon this work on Oahu but on the other islands the *Euphorbia*-fauna is practically unknown. These notes refer to Oahu only.

At least one and probably two or three species of *Proterhinus* feed in the larval condition in the wood of recently dead stems and on reaching maturity emerge and live for a time on the foliage on *E. hillebrandi* on the lateral ridge leading out to the eastward from Mt. Kaala in the Waianae range, on *E. clusiaefolia* on Kaumuohona ridge in the Koolau range, and on *E. multiformis* on the Ewa ridge bounding Kalihi valley in the same range.

Mr. Swezey has found the *Phycitid* moths *Oenophantis iodora* and *O. leahi*, attacking the foliage of *Euphorbia*, the former in the mountains, the latter in the lowlands.

A number of Heteroptera of the families *Coreidae*, *Lygaeidae*, and *Miridae* have been taken on *Euphorbia* but have not yet been worked up systematically nor has their biology been studied sufficiently to be sure they are really attached to these plants. One species of the *Cicadellid* (Jassid) genus *Nesophrosyne* has been taken attached to *Euphorbia hillebrandi* on the Kaala ridge and another upon what is considered by Mr. C. N. Forbes as a form of *E. multiformis* growing on the Ewa coral plain near Sisal, a few feet above sea level. The *Del-*

Proc. Haw. Ent. Soc., III, No. 5, April, 1918.

*phacid, Aloha kirkaldyi*, is attached to *E. hillebrandi* growing on the same ridge of Kaala before referred to. Another *Euphorbia* insect and one of the most interesting of our endemic insects is the bizarre *Delphacid, Dictyophorodelphax mirabilis* Swezey, which the writer had the pleasure of relating to its foodplant *Euphorbia clusiaefolia* in 1916 and later with Mr. Timberlake and Mr. Swezey of finding it attached on Mt. Kaala to *E. hillebrandi* some twenty-five miles in an airline from its original habitat in the other range of mountains. On May 6, 1917, while collecting in Wailupe in the southeastern Koolau Mountains in company with Mr. Swezey after climbing out of the valley at the end of the middle ridge dividing the two main branches of the valley at an elevation of about twelve or fifteen hundred feet we came upon some bushes of a *Euphorbia* determined for me by Mr. Forbes as *E. celastroides*. Upon sweeping these bushes I secured four specimens of a *Dictyophorodelphax* and when I informed Mr. Swezey of my find, he secured two adults and a single nymph. Upon comparison of these specimens with *D. mirabilis* it became evident that we had discovered a second species of this peculiar endemic genus of *Delphacidae*. It will be interesting to learn if other species occur attached to other species of *Euphorbia* upon the other islands.

* *Dictyophorodelphax swezeyi* n. sp.

Total length, 6 mm.; length of the prolongation of the head in front of the eyes, 2.5 mm.

Closely resembling *D. mirabilis* Swezey but smaller and darker; the prolongation of the head relatively shorter, more slender and tapering, not bent downward apically but with a slight upward curve; tegmina proportionally a little longer but not reaching the apex of the abdomen.

♂ Genital styles blunt at the apex, only slightly curved, not prolonged into an acute curved tooth, apical slender portion of aedeagus nearly in a straight line with the thicker basal portion.

*Nymph.* The nymphs may be readily distinguished from those of *D. mirabilis* by the much darker coloration and the less prolonged head in corresponding instars.

---

* This description supplied just before the MS. for this number of the Proceedings went to press.—[Ed.]

Described from 3 ♂♂, 3 ♀♀, and 1 nymph, Waihupe, May 6, 1917 (J. C. Bridwell and O. H. Swezey); and 15 ♂♂, 14 ♀♀, and 12 nymphs, collected on *Euphorbia celastroides*, Nin, Feb. 10, 1918 (O. H. Swezey and P. H. Timberlake). These localities are adjacent in the southeastern Koolau Mountains, Oahu, Hawaiian Islands.

Type ♂ and ♀ and paratypes in the Bernice Pauahi Bishop Museum, paratypes in the collection of the Hawaiian Sugar Planters' Experiment Station, and in the private collections of J. C. Bridwell, O. H. Swezey, and P. H. Timberlake.

Named in appreciation of Mr. O. H. Swezey, who first discovered and described the genus, for his extensive and successful work in advancing our knowledge of the biology of Hawaiian insects.

NOTE.—The writer had hoped to have the species described by Mr. Frederick Muir, but his departure to take up war service in England prevented this and in default of some one more familiar with the group has described the species to place on record this interesting addition to our fauna.

---

## JULY 6TH, 1917.

The one hundred forty-second meeting of the Society was held in the usual place, Vice-President Pemberton in the chair. Other members present: Messrs. Bridwell, Ehrhorn, Newell, Osborn and Swezey.

Minutes of previous meeting read and approved.

### ENTOMOLOGICAL PROGRAM.

Mr. Ehrhorn discussed the confusion which is apt to occur regarding the injury to plants. For example: he had noticed African daisies attacked by some kind of blight, the cause of